



CP Road Map E-News November 2010

The **CP Road Map E-News** is the newsletter of the [Long-Term Plan for Concrete Pavement Research and Technology \(CP Road Map\)](#), a national research plan developed and jointly implemented by the concrete pavement stakeholder community. To find out more about the CP Road Map, or to get involved, contact Dale Harrington, dharrington@snyder-associates.com, 515-964-2020.

New Moving Advancements into Practice (MAP) Brief

Moving Advancements into Practice (MAP) Briefs describe promising research and technologies that can be used now to enhance concrete paving practices.

[MAP Brief 1-2: Deleterious Chemical Effects of Deicing Solutions on Concrete Pavements](#) has recently been published under [CP Road Map Track 1: Performance-Based Concrete Pavement Mix Design System](#).

[Download MAP Brief 1-2](#) (849 kb pdf).



News from the Road

News from the Road highlights research around the country (and, in this issue, around the world) that is helping the concrete pavement community meet the research objectives outlined in the CP Road Map.

FHWA conducts interlaboratory study on measuring coefficient of thermal expansion of concrete

A national *Interlaboratory Study on Measuring Coefficient of Thermal Expansion of Concrete* was recently performed by FHWA Turner-Fairbank Highway Research Center, and published in the Transportation Research Record. This paper documents an investigation into the variability of results obtained from different devices used to measure the coefficient of thermal expansion (CTE) in concrete. As a result of this study, recommendations to improve testing methods are presented.

[Click here to obtain a copy of the report.](#)

This work is meeting research needs identified in [CP Road Map Track 1: Performance-Based Concrete Pavement Mix Design System](#).

Wisconsin research evaluates open-graded base course with doweled and non-doweled transverse joints

Recent research in Wisconsin evaluated the performance of doweled versus non-doweled pavement sections constructed over a base that is either dense graded, asphalt stabilized, cement stabilized permeable, or untreated permeable with one of two different gradation requirements. The pavement sections included in this study are along three U.S. and State highways. The performance evaluation included testing joints for load transfer efficiency, calculating values for Pavement Distress Index (PDI) and International Roughness Index



(IRI), and measuring hydraulic conductivity through the base. The study concluded that dense-graded base is the least expensive and meets drainage guidelines, and is therefore recommended.

[Click here to read the full report.](#)

This project is contributing to research objectives outlined in [CP Road Map Track 6: Innovative Concrete Pavement Joint Design, Materials, and Construction](#) and [Track 8: Long-Life Concrete Pavements](#).

Wisconsin DOT develops standardized test procedures for evaluating deicing chemicals

A recent research effort in Wisconsin investigated, evaluated, and developed standard laboratory testing procedures for anticipating pavement performance when deicing chemicals, additives, and admixtures are used. Through a literature review, researchers identified the shortcomings of conventional test methods, and explored alternative tests including differential scanning calorimetry (DSC) and a Modified SHRP Ice Melting Test. It was mentioned, however, that these alternatives should be used for screening purposes only because neither method is comprehensive enough to accurately predict field performance.

[Click here to download the full report.](#)

This project is meeting needs identified in [CP Road Map Track 1: Performance-Based Concrete Pavement Mix Design System](#).

Toronto research evaluates performance of permeable pavements in cold climates

The University of Guelph together with the Toronto and Region Conservation Authority recently prepared an interim report, documenting the performance evaluation of various permeable pavements including interlocking permeable concrete pavers, pervious concrete, and impervious asphalt. Another interim report is scheduled for completion in March 2011 and the final report will be completed in 2012. At the end of this research effort, the pavements will have been evaluated for over three years, during which time critical performance factors in cold climates will be identified and recommendations for improved design, maintenance, and operation will be presented.



[Click here to read the interim report.](#)

This effort is an example of work that can be categorized under the CP Road Map Track 13: Concrete Pavement Sustainability.

Research in Malaysia investigates construction and performance of recycled roller-compacted concrete pavements

A paper presented at the First International Conference on Pavement Preservation, held in April 2010 Newport Beach, California documents research that investigated the use of four different binders (foamed bitumen, bitumen emulsion, cement, and lime binders) for rehabilitating an existing roller-compacted concrete pavement. The type of rehabilitation method presented in this paper is an alternative to the typical rehabilitation methods for roller-compacted concrete pavements in Malaysia, which include a granular and asphalt overlay. The study is an example of innovative pavement design techniques and alternative rehabilitation methods that include recycling the existing pavement.

[Click here to read the report.](#)

This project is meeting research needs identified in [CP Road Map Track 13: Concrete Pavement Sustainability](#).

Updates from the States: Washington

To accomplish concrete pavement research, the Washington Department of Transportation (WSDOT) often partners with universities, other State Departments of Transportation, and national centers through programs and organizations such as the Transportation Pooled Fund (TPF), Washington State Transportation Center (TRAC), Transportation Northwest (TransNow), and State Pavement Technology Consortium (SPTC).

TRAC is a partnership between WSDOT, the University of Washington, and Washington State University. TransNow is a Regional University Transportation Center led by the University of Washington. Universities from Idaho, Alaska, and Oregon are also a part of TransNow. SPTC pools the resources and efforts of the California, Minnesota, Texas, and Washington DOTs for pavement research in an effort to improve design, construction, and maintenance methods and procedures.

Upcoming concrete pavement research at WSDOT includes the evaluation of long-term pavement performance and noise characteristics of next-generation concrete pavement surfaces. WSDOT is also conducting several research projects related to concrete pavement sustainability that are contributing to research needs outlined in [CP Road Map Track 13](#).

[Read on for more information about concrete pavement research in Washington...](#)

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The [National Concrete Pavement Technology Center](#) at [Iowa State University](#) provides operations support services to the CP Road Map program.

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